

WHAT IS CLAIMED IS:

- 1               1. A magnetic head comprising:
  - 2               a retrieving unit for converting information output from a recording medium into
  - 3               electric signal;
  - 4               a writing unit having a function of electromagnetic conversion for writing
  - 5               information in said recording medium in response to said electric signal; and
  - 6               a first protective film formed on said retrieving unit and said writing unit so as to
  - 7               protect said units;
  - 8               wherein a second protective film is formed on said first protective film, and the
  - 9               coefficient of linear expansion of said second protective film is smaller in comparison with that
  - 10              of said first protective film.
- 1               2. A magnetic head as claimed in claim 1, wherein said first protective film is an
- 2               alumina film, and said second protective film is a film made of an alumina film containing
- 3               silicon oxide therein.
- 1               3. A magnetic head as claimed in claim 1, wherein said first protective film is an
- 2               alumina film, and said second protective film is a film made of mainly carbon or boron.
- 1               4. A magnetic head as claimed in claim 2, wherein said second protective film is
- 2               a film made of an alumina film containing 5% or more silicon oxide therein.
- 1               5. A magnetic recording/reading apparatus comprising:
  - 2               1) a recording medium, which information is recorded or read out from;
  - 3               2) rotatable device that rotates the recording medium;
  - 4               3) supporting/positioning device that supports the magnetic head, and positions
  - 5               said magnetic head at a desired position on the recording medium;
  - 6               4) a recording/retrieving circuit for processing information signal; and
  - 7               5) a magnetic head comprising:
    - 8               a) a retrieving unit for converting information output from a recording
    - 9               medium into electric signal;

10                   b) a writing unit having a function of electromagnetic conversion for  
11                   writing information in said recording medium in response to said electric signal; and  
12                   c) a first protective film formed on said retrieving unit and said writing  
13                   unit so as to protect said units;  
14                   wherein a second protective film is formed on said first protective film, and the  
15                   coefficient of linear expansion of said second protective film is smaller in comparison with that  
16                   of said first protective film.

1                 6. A magnetic recording/retrieving apparatus as claimed in claim 5, wherein said  
2                 magnetic head is positioned and set in a manner as to approach the recording medium with a  
3                 clearance of about the sum of a dimension of surface asperity on said recording medium and a  
4                 dimension of a floating fluctuation during rotation of said recording medium when said magnetic  
5                 recording/retrieving apparatus is in operation.